



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,926	12/30/2005	Masataka Kira	126514	3681
25944 7590 06/12/2008 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER RUSH, ERIC				
ART UNIT 2624		PAPER NUMBER		
MAIL DATE 06/12/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/562,926

**Applicant(s)**

KIRA, MASATAKA

**Examiner**

Eric Rush

**Art Unit**

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 03/24/2006
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

- Claims 22 – 23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed invention appears to be directed towards a computer program, which is not patentable eligible subject matter. Any computer executable software code must be stored in a computer readable storage medium to enable the underlying functionality. A structural and functional interrelationship between the computer program and the structural elements of the computer, which would permit its functionality to be realized, should be included in the claim. An example of acceptable language under 35 U.S.C. 101 would be "a computer readable medium storing a computer program...".

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims are rejected under 35 U.S.C. 102(e) as being anticipated by Blake et al.

U.S. Publication No. 2005/0232510 A1.

- With regards to claim 1, Blake et al. teach a stereoscopic image - generating method having a left image and a right image for stereoscopic vision, said stereoscopic image generating method comprising: a target region extraction step of extracting left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image which are displayed on a display plane; (Blake et al., Page 2 Paragraph 0025 and Page 4 Paragraphs 0048 - 0051) and a removed region extraction step of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between the left and right target regions. (Blake et al., Page 4 Paragraphs 0052 - 0055)
- With regards to claim 2, Blake et al. teach the stereoscopic image generating method as claimed in claim 1, further comprising a removed region processing step of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed

region from the target regions. (Blake et al., Page 4 Paragraph 0053 - Page 5 Paragraph 0057)

- With regards to claim 3, Blake et al. teach the stereoscopic image generating method as claimed in claim 2, wherein the processing of making more inconspicuous is performed in advance before using binocular stereoscopic left and right images. (Blake et al., Page 4 Paragraph 0053 - Page 5 Paragraph 0057, The process is conducted before the images are finalized binocular stereoscopic images Paragraph 0048)
- With regards to claim 4, Blake et al. teach the stereoscopic image generating method as claimed in claim 2, wherein the processing of making more inconspicuous is a processing of blurring the removed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which induces blur)
- With regards to claim 5, Blake et al. teach the stereoscopic image generating method as claimed in claim 3, wherein the processing of making more inconspicuous is a processing of blurring the removed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass

smoothing operation is performed on the disparity patch which induces blur)

- With regards to claim 6, Blake et al. teach the stereoscopic image generating method as claimed in claim 2, wherein the processing of making more inconspicuous is a processing of reducing contrast of the removed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which is capable of inducing contrast reduction)
- With regards to claim 7, Blake et al. teach the stereoscopic image generating method as claimed in claim 3, wherein the processing of making more inconspicuous is a processing of reducing contrast of the removed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which is capable of inducing contrast reduction)
- With regards to claim 8, Blake et al. teach the stereoscopic image generating method as claimed in claim 2, wherein the processing of making more inconspicuous is a processing of reducing saturation or brightness of the removed region. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058)

- With regards to claim 9, Blake et al. teach the stereoscopic image generating method as claimed in claim 3, wherein the processing of making more inconspicuous is a processing of reducing saturation or brightness of the removed region. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058)
  
- With regards to claim 10, Blake et al. teach the stereoscopic image generating method as claimed in claim 2, wherein the processing of making more inconspicuous is a processing of bringing a hue of the removed region to a cold color family. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058, the process alters the color of the inconspicuous region bringing the hue to any color family, which includes cold colors)
  
- With regards to claim 11, Blake et al. teach the stereoscopic image generating method as claimed in claim 3, wherein the processing of making more inconspicuous is a processing of bringing a hue of the removed region close to a cold color family. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058)

- With regards to claim 12, Blake et al. teach the stereoscopic image generating method as claimed in claim 2, wherein the processing of making more inconspicuous is a processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058)
- With regards to claim 13, Blake et al. teach the stereoscopic image generating method as claimed in claim 3, wherein the processing of making more inconspicuous is a processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058)
- With regards to claim 14, Blake et al. teach the stereoscopic image generating method as claimed in claim 2, wherein the processing of making more inconspicuous is one of or a combination of the following processing's: (1) processing of blurring the removed region; (2) processing of reducing contrast of the removed region; (3) processing of reducing saturation or brightness of the removed region; (4) processing of bringing



a hue of the removed region close to a cold color family; and (5) processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 3 Paragraphs 0039 – 0041 and Page 4 Paragraph 0053 – Page 5 Paragraph 0058)

- With regards to claim 15, Blake et al. teach the stereoscopic image generating method as claimed in claim 3, wherein the processing of making more inconspicuous is one of or a combination of the following processing's: (1) processing of blurring the removed region; (2) processing of reducing contrast of the removed region; (3) processing of reducing saturation or brightness of the removed region; (4) processing of bringing a hue of the removed region close to a cold color family; and (5) processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 3 Paragraphs 0039 – 0041 and Page 4 Paragraph 0053 – Page 5 Paragraph 0058)
- With regards to claim 16, Blake et al. teach a stereoscopic image generating apparatus having a left image and a right image for

stereoscopic vision, (Blake et al., Page 2 Paragraph 0025) said stereoscopic image generating apparatus comprising: target region extraction means of extracting left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image which are displayed on a display plane; (Blake et al., Page 2 Paragraph 0025 and Page 4 Paragraphs 0048 - 0051) and removed region extraction means of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between the left and right target regions. (Blake et al., Page 4 Paragraphs 0052 - 0055)

- With regards to claim 17, Blake et al. teach the stereoscopic image generating apparatus as claimed in claim 16, further comprising removed region processing means of carrying out processing of making more inconspicuous the removed region identified by said removed region extraction means than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 - Page 5 Paragraph 0057)
- With regards to claim 18, Blake et al. teach a stereoscopic viewing method of watching a stereoscopic image having a left image and a right image for stereoscopic vision, (Blake et al., Page 2 Paragraph 0025) said

stereoscopic viewing method comprising: a target region extraction step of extracting left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image which are displayed on a display plane; (Blake et al., Page 2 Paragraph 0025 and Page 4 Paragraphs 0048 - 0051) and a removed region extraction step of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between the left and right target regions. (Blake et al., Page 4 Paragraphs 0052 - 0055)

- With regards to claim 19, Blake et al. teach the stereoscopic viewing method as claimed in claim 18, further comprising a removed region processing step of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 - Page 5 Paragraph 0057)
- With regards to claim 20, Blake et al. teach a stereoscopic viewing apparatus for showing a stereoscopic image having a left image and a right image for stereoscopic vision, (Blake et al., Page 2 Paragraph 0025) said stereoscopic viewing apparatus comprising: target region extraction means of extracting left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the

right image which are displayed on a display plane; (Blake et al., Page 2 Paragraph 0025 and Page 4 Paragraphs 0048 - 0051) and removed region extraction means of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between the left and right target regions. (Blake et al., Page 4 Paragraphs 0052 - 0055)

- With regards to claim 21, Blake et al. teach the stereoscopic viewing apparatus as claimed in claim 20, further comprising removed region processing means of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction means than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 - Page 5 Paragraph 0057)
- With regard to claim 22, Blake et al. teach a program for controlling a stereoscopic image generating apparatus having a left image and a right image for stereoscopic vision, (Blake et al., Page 5 Paragraphs 0059 - 0063) said program causing said stereoscopic image generating apparatus to execute: a target region extraction step of extracting left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image which are displayed on a display plane; (Blake et al., Page 2 Paragraph 0025

and Page 4 Paragraphs 0048 - 0051) and a removed region extraction step of extracting a more inconspicuous region as a removed by identifying the more inconspicuous region between the left and right target regions. (Blake et al., Page 4 Paragraphs 0052 - 0055)

- With regards to claim 23, Blake et al. teach the program as claimed in claim 22, further causing said stereoscopic image generating apparatus to execute a removed region processing step of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 - Page 5 Paragraph 0057)

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 24 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blake et al. U.S. Publication No. 2005/0232510 A1 in view of Mashitani et al. U.S. Publication No. 2005/0089212 A1.

- With regards to claim 24, Blake et al. teach a stereoscopic image generating method which has a left image and a right image for stereoscopic vision, and forms a virtual stereoscopic image by vergence angles generated from individual points corresponding in the left image and the right image, said stereoscopic image generating method comprising: a target region extraction step of extracting left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image which are displayed on a display plane; (Blake et al., Page 2 Paragraph 0025 and Page 4 Paragraphs 0048 - 0051) and a removed region extraction step of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between the left and right target regions. (Blake et al., Page 4 Paragraphs 0052 - 0055) Blake et al. fail to teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of a stereoscopic image which are prepared in advance to form the virtual

stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. Mashitani et al. teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of a stereoscopic image which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. (Mashitani et al., Page 25 Paragraphs 0352 – 0357 and Page 27 Paragraph 0371) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Blake et al. with the teachings of Mashitani et al. This modification would have been prompted in order to minimize occlusions and artifacts produced in the stereographic image.

- With regards to claim 25, Blake et al. in view of Mashitani et al. teach the stereoscopic image generating method as claimed in claim 24. Blake et al. teach the method further comprising a removed region processing step of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction step than a region

remaining after eliminating the removed region from the target regions.

(Blake et al., Page 4 Paragraph 0053 - Page 5 Paragraph 0057)

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Wu U.S. Publication No. 2005/0129325 A1; which is directed towards an image processing apparatus and method.
- Nishiya U.S. Patent No. 4,825,393; which is directed towards a position measuring method.
- Adkins et al. U.S. Publication No. 2003/0190072 A1; which is directed towards a method and apparatus for processing images.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC RUSH whose telephone number is (571)270-3017. The examiner can normally be reached on 7:30AM - 5:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571) 272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ER  
/Samir A. Ahmed/

Supervisory Patent Examiner, Art Unit 2624